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ABSTRACT

A study was conducted to characterize those features which could be recognized across students' academic journals. Subjects, 110 students in an introductory linguistics course, kept a journal during the course. The study was mainly interested in the relationships among categorical ratings of linguistic features in students' journals, and the relationships between these features and students' course performance. Three trained judges rated entries taken from students' journals at three periods during the course. Entries were rated according to six 4-point rating scales: (1) formal/informal; (2) objective/affective; (3) elaborated/unelaborated; (4) predetermined/unfolding; (5) externally defined versus internally constructed knowledge; and (6) negative/positive evaluation. Results indicated that the degree of formality/informality was related to the degree of objective/affective expression and the degree of predetermined/unfolding. The degree of objective/affective expression was related to the degree of internally constructed versus externally constructed knowledge. Results also indicated that students who were applying the course material were more likely to elaborate and to develop their own working knowledge than students who were summarizing the material. The only journal rating related to final grade was the degree of elaboration which showed a relatively low relationship. The kinds of thinking encouraged by journal writing had little to do with the students' learning as measured on the objective tests. Low correlation suggested that students' beliefs about the journal form were not strongly related to their actual journal writing. (MG)

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Research on Writing to Learn: The Interesting Case of Academic Journals

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For several years now, we have been conducting research on the relationships between writing and learning in academic journals. Part of our motivation for engaging in this research comes from the paucity of empirical investigations of this relationship in general and of academic journal writing in particular, during a time when educators across the curriculum are increasingly experimenting with informal writing in their classrooms. At first, we--like so many other teachers whose testimonials fill the pages of both scholarly and pedagogically oriented journals--accepted almost without question the notion that students learn better when they write meaningfully about what they are learning. In fact, it seemed to us so moot a point that we wondered whether such a claim was even worth spending much time investigating. We could find no members of our own research community who would disagree with it in principle, and those of our colleagues in other fields who resisted it did so, we assumed, because they had not yet been fully converted to the tenets of writing across the curriculum and the theories that have fueled composition as a discipline for several decades now.

As we scoured the voluminous literature on WAC and writing to learn, we soon began to realize what an enormous problem we had stumbled upon. Almost none of what we found tried to support empirically what it overwhelmingly endorsed in practice (Anson, 1988). Of the over 600 published books, articles, reports and dissertations we located (Anson, Schwiebert & Williamson, in press), the handful of research studies among them were by no means conclusive, and raised so many interesting problems about the nature of writing and learning that we at once set to work on a variety of preliminary investigations, of mixed types, to begin carving our a research agenda.

In this brief paper, we will outline just a few of the methods we have been using to study academic journal writing and share some of our tentative conclusions, focusing along the way on the issues we found most complicated for our continued

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research. We hope, in doing so, to suggest the complexity and magnitude of this largely unexplored territory, and to invite readers interested (or already engaged) in conducting research on academic journal writing to correspond with us about their own methods, problems, and results.

Describing Discourse Features of Academic Journals

Despite increased interest in the use of journals to foster learning (McGinley & Tierney, 1989), there has been little scholarly work exploring the nature of the linguistic, rhetorical or structural characteristics of this "genre," which we define as a form distinct from creative logs, personal diaries or repositories of "prewriting" typically designed to foster fluency or help writers prepare for formal writing. Academic journals, in contrast, are usually based on responses to assigned readings or topics presented in class, and are most often evaluated not for their style or control of formal writing abilities but for their reflection of students' learning and thinking.

Understanding the discursive characteristics of academic journals is essential for any studies of journals' contributions to students' learning. Teachers' reactions to academic journals are shaped greatly by their assumptions about the nature of the genre. If a teacher expects a journal entry to be organized in the same manner as a formal essay, she may evaluate the journal according to criteria associated with formal expository texts--in which case it is no longer an academic journal as such but a *repository* for frequent "entries" of formal writing--in other words, a collection of writing assignments. In contrast, many instructors learn to recognize those features of journals that are typically related to learning, regardless of surface mechanics, structure and organization, voice, etc. Fulwiler (1989), for example, claims that "better journals" in college literature classes are informal, subjective, inquisitive, contradictory, reflective, and exploratory, and contain frequent doubts and questions. Fulwiler argues that students who adopt a more informal, exploratory stance are more likely to formulate the course material "in their own words," enhancing their understanding. It should stand to reason that students who write journals with these characteristics will perform better than students who don't.

The first goal of our research, then, was to characterize as precisely as possible those features which we could recognize across students' academic journals. Once taxonomized, they might, we reasoned, provide a baseline against which we could assess students' learning.

Students in one phase of our research (we'll call it "Study C") were enrolled in an introductory linguistics course designed for English, English education, and elementary education majors. All 110 students were required to keep a journal during the course. They were told they would receive an overall journal rating based mainly on the quantity of writing they produced during the term. This rating con-

tributed 10% of their course grade, the rest being determined mainly by performance on objective exams (a measure of their learning).

In order to determine how students perceived the nature of the journal, we also asked them to rate their perceptions of a "good journal" and a "good essay" on 12 semantic differential scales, ratings that implied comparisons between the journal and formal academic essays.

Study C was mainly interested in the relationships *among* categorical ratings of linguistic features in students' journals, and the relationships *between* these features and students course performance. In other words, if certain linguistic or rhetorical features of students' journals related significantly to their course performance, we would have some preliminary empirical evidence that something students did in their *writing* must be related to something they did in their *thinking* which precipitated better *learning* as measured on the standardized tests in the course.

Three trained judges rated entries taken from students' journals at three periods during the course (early, middle and late). Entries were rated according to six 4-point rating scales which we designed after extensively examining and discussing students' journal writing in a previous section of the course. We present these criteria at some length because they are so central (and, we have found, so controversial) a part of our research.

1. **FORMAL/INFORMAL:** This continuum measures the degree of formality in students' journal writing. Features of informality include lack of sentence or paragraph boundaries; fragments; slang or casual lexis ("so anyway," "yeah," "right," "oh! another thing . . . ," "geez," etc.); dashes; lack of coherence or cohesion. Formal entries, in contrast, generally maintain standard academic prose and are characterized by discourse features not associated with casual spoken language ("thus," "consequently," "albeit," etc.).

   Formal entry: *"The majority of the Dakota language is comprised of velar sounds and glottal sounds. Offhand I cannot place any dental sounds. The bilabial sounds (/p/ and /b/) are barely heard. They were used in transcription by Stephen Riggs in the Dakota Dictionary, who was a missionary for English notation, but are not emphasized in the native pronunciation."*

   Informal entry: *"Also it seems absurd to question if men have a poorer eye for color when you can look at any book and see paintings by men like Sargent and Degas, or Van Gogh for christsakes. Maybe your average American male has a shitty color eye because he doesn't bother to develop it. This has more to do with my opinions about art than about language so I'll just put the kabosh on this whole thing right now while I'm ahead."*

2. **OBJECTIVE/AFFECTIVE:** This continuum measures the degree of explicit expression of emotional reactions or feelings versus an impersonal stance. Features include personal pronouns, expletives and exclamations, self-disclosure of feelings and reactions, etc.

   Objective entry: *"A bilabial v-less stop is a /p/. A bilabial v-ed stop is a /b/. A voiceless alveolar dental fricative is a /f/."*

   Affective entry: *"Uh. How distressing! I hoped that rereading an early journal entry would be pleasant because all the questions would be answerable by now, but such was not so."*

3. **ELABORATED/UNELABORATED:** This continuum measures the depth of exploration of a particular topic, idea, or experience. Features include sustained focus vs. frequent shifts, use of specific details. Throughout the entry which is excerpted as "unelaborated" below, for example, the writer shifts topics abruptly without much sustained ("elaborated") focus on any one of them.

   Elaborated entry: *[A student writes two pages on an experience with prejudice based on language attitudes.]*

   Unelaborated entry: *"Not all of the phonemes in IPA are the way I say them. /ay/ would sound like Fonzi says ay, not like the IPA pronunciation thigh. Interesting question brought up in class--do people's perceptions of the world differ because they speak a different language? Why the term "strong" for the [Middle English] verb forms?*

4. **PREDETERMINED/UNFOLDING:** This continuum measures the degree to which an entry reflects a predetermined, previously announced topic, idea, or narrative. Unfolding entries reflect spontaneous, momentary expressions of ideas as they come to mind. Features include evidence of discovery, insight, asides, sudden shifts, questions, etc.

   Predetermined entry: *"In class today, I was reminded of a situation that occurred some ten years ago. I lived in Arizona at the time . . ."* (recounts the experience at some length).

   Unfolding entry: *"Like if it was music they would be held for two counts + the short would only be held for one. I just checked the book and I'm right--short and long refers to duration. Yah Mona keep it up!"*

5. **EXTERNALLY DEFINED VS. INTERNALLY CONSTRUCTED KNOWLEDGE:** This continuum measures the degree of "rehearsal," or what is often in educational parlance called "regurgitation," as opposed to the generation of one's own perspectives or knowledge. Features include direct quotes from text or lecture material, restatements, or references to authorities' words as unquestioned facts or statements of truth. Metacognition or reflection on one's own thinking/learning processes would constitute internally constructed knowledge.

   Externally defined: "As it says in the text, vowels become nasalized when they occur before a nasal consonant phoneme."

   Internally constructed knowledge: "A funny thing happened on the way home today. I friend and I were walking and the word 'sword' came up. She pronounced it /sowrd/ and I pronounce it /swowrd/. And both of us thought we were correct! We went around and around until we were both becoming a little emotional over such a small thing."

6. **NEGATIVE/POSITIVE EVALUATION:** This continuum measures the subjective responses of the raters to the overall "quality" of the entry, as judged by level of interest, etc. In this category, we did not specify any criteria since we were interested in which entries would be rated highly relative to the other five categories.

Rating sessions were conducted so that all three raters would reach some agreement about categories 1-5. Sample essays were rated and discussed until the raters felt confident that they were recognizing the same sorts of features in the students' journals.

Cronbach alpha reliability ratings for all five of the ratings ranged from .70-.80. The raters achieved, somewhat surprisingly, .83 for the sixth category (negative/positive evaluation)--greater reliability *without* any discussion or specification of criteria. Ratings for the three journal entries of each student were then combined and averaged.

Which Features Were Related to Each Other?

To determine the relationships among the ratings, we correlated the scores for each category. In other words, if two features were related in some way, we would see relationships between their ratings across students in the sample. Such correlations, of course, would not imply a *causal* relationship (e.g., that Feature 1 caused Feature 2) but only that when a student tends to use one feature she also uses the other.

The correlations indicate that the degree of formality/informality was related to the degree of objective/affective expression (r = .46) and the degree of predetermined/unfolding (r = .54). The degree of objective/affective expression, in turn, was related to the degree of internally constructed vs. externally constructed knowledge (r = .48). Adopting an objective stance, in other words, was related to formulating externally defined knowledge. In contrast, the formality/informality continuum was not related to the degree of internally constructed/externally constructed knowledge, which suggests that students may generate their own knowledge regardless of whether they do so in a way that leads to formal or informal sorts of writing.

The judges' subjective evaluations were most highly related to the degree of elaboration (r = .65) and internally constructed/externally constructed knowledge (r = .83). This suggests that the judges were most favorably disposed towards entries that were elaborated and in which students were formulating their own knowledge, a bias which may reflect their own engagement in the entry. (Entries that rehashed course material were rated low on the subjective scale.)

Problems: The judges' subjective evaluations raise an interesting issue which we call the "boredom effect." Reading journals that rehash the same, familiar course material can be exceedingly tedious. When students narrate personal experience, relate the course material to their own ideas, etc., as Fulwiler (1989) notes, their journals are pleasant to read. Yet this may, through teacher comments, push students toward a kind of writing which they may not find *personally* as useful as writing which is less interesting to read. Thus, the journal may begin as an entirely "free" place to learn and become, over a course, a more restricted vehicle for pleasing the teacher.

How Did the Entries' Purposes Relate to Other Features?

A further dimension of our study involved rating students' entries on a bipolar scale, according to whether the student summarized or applied the course material. This feature essentially tried to capture whether the student was repeating material more or less verbatim--a common characteristic in students' regular notebooks and informal writing to prepare for exams--or whether they were applying the material to their own experiences, problems, or issues beyond the course. Summarizing is typically marked by lists, definitions, textbook material, or repetition of lecture notes: "Chapter 4, p. 99, phonology. OK, phonetics is the overall term for the rules and principles that govern the distribution of speech sounds. Get it?" Applying the material is reflected in an entry like the following: "I never thought about the physiological functions of the body goes through to produce speech sounds. It is amazing that there is a connection between the type of morpheme one speaks and the sounds physically produced. In the book they pointed to the fact that hesitation sounds occur between free morphemes but not between bound morphemes. I never took the time to think about the complexity involved in producing the sounds which constitute our language." As these two excerpts make clear, there can be a fine line between rote rehearsal and the active application of course material.

A chi-square analysis of the relationship between these two purposes and entry characteristics (low vs. high ratings on 1-5 above) showed that purpose was related to the degree of elaboration ($p < .01$) and internally- vs. externally-constructed knowledge ($p < .001$): students who were applying the course material were more likely to elaborate and to develop their own working knowledge than students who were summarizing the material.

Problems: Applying material would seem to be related to certain kinds of learning--elaborating and generating knowledge. However, we hesitate to suggest that even the most basic rote rehearsal is "unproductive." Students may need to summarize material to "get it straight" in their minds, and the actual linguistic features of that summary may not reflect the depth of their thinking as they engage in it. (It seems unlikely, for example, that many students would spend inordinate amounts of time doing something that they found useless or boring.) What the results above do suggest is that when students seemed to do something *with* the information in their course, they wrote for longer on a single topic instead of shifting from idea to idea. However, whether such elaboration leads to greater learning as somehow measurable in course outcomes is more difficult to tell.

How Did Journal Features Relate to Students' Performance?

At the center of our research was the question of whether specific kinds of writing related to success as measured on objective exams. The only journal rating related to final grade, however, was the degree of elaboration, and even this showed a relatively low relationship ($r = .20$). Moreover, the grade assigned to the journals, which was based primarily on quantity, was related to neither the course grade nor any of the ratings. In other words, the kinds of thinking encouraged by journal writing had little to do with the students' learning *as measured on the objective tests.* Since this had originally been our strongest hypothesis, we were rather surprised by the negative results. Furthermore, how *much* students wrote in their journals had little or no bearing on the kinds of entries they wrote. This too surprised us, for it would seem likely that students who consistently write elaborated entries would simply write more, while students who rehearsed material or shifted topics frequently would write less. But such was not the case.

Problems: Clearly, if academic journal writing encourages certain kinds of thinking, then we must be very sensitive to the ways in which we measure or assess that thinking. If, for example, academic journals encourage a certain kind of open-ended inquiry, a way of "doing" a particular subject or discipline (in this case, linguistics), another measure such as a term paper or various kinds of independent analysis would seem preferable to objective tests. At the same time, we are especially interested in the relationship between learning through journals and typical performance measures, especially in larger lecture courses where students receive little attention and do not usually engage in active learning strategies.

Without strong empirical evidence that journals help students to perform more successfully in such courses, we hesitate to religiously argue their advantages in our consulting efforts across the curriculum.

How Did Students' Perceive of Journal Writing?

One final strand of Study C is worth mentioning. As we noted, students were asked on the first day of the course to rate their perceptions of what constitutes a "good" academic journal and what constitutes a "good" academic paper, on 12 different scales: formal-informal, private-public, hard-easy, emotional-unemotional, sequential-random, involved-detached, structured-unstructured, tentative-resolute, elaborated-unelaborated, planned-spontaneous, non-conversational-conversational, and unorganized-organized. For each of these scales, the mean ratings for "good journal" differed significantly from the mean ratings for "good paper." Students in the course conceived of journal writing as significantly more informal, private, easy, emotional, random, involved, unstructured, tentative, elaborated, spontaneous, conversational and unorganized than they conceived of a "good paper." This raises an important question about the relationship between students' perceptions and actions. Do their perceptions, in fact, influence their use of features? Correlations here were quite low, suggesting that students' beliefs about the journal form were not strongly related to their actual journal writing. It could be that students understand implicitly what makes for a canonical journal, but placed in a context where they must keep one, make use of whatever features are personally most meaningful there.

Prospects

We have shared this small piece of our ongoing research to suggest some of the many problems inherent in studying the relationship between writing and learning. In other research, we are exploring these and similar problems in more detail. In the most recent phase of our research, for example, we asked another group of students who enrolled in the same course as we discussed in Study C to keep dialogue journals throughout the term. Students had to write daily to and for each other, providing both self-sponsored entries and reactions to their partner's entries. Although we have not yet rated the entries, our preliminary analyses show that the features of discourse in the dialogue journals are quite different than those in our earlier, "monologic" journals. Research on student-to-student dialogue journals is extremely scarce, partly because dialogue journals are usually kept between teacher and student. We hope to extend our analysis to see whether "productive" dialoguing relates in any way to learning--as measured in richer ways than objective course tests.

On a final note, we would also suggest as a potentially rich research direction the relationship between students' learning styles and habits or characteristics in academic journal writing. As Thies-Sprinthall and Sprinthall suggest, college stu-

dents fall into two levels of development; one group prefers to learn in a factual, structured, defined mode; are more compliant and conforming; and tend to believe there is one right way of teaching or learning (cf. Perry, 1970). The other mode prefers to learn in a more abstract, unstructured and autonomous way. In an earlier study (Beach & Anson, 1988), we administered the *Inventory of Learning Processes*, a well tested instrument for tapping into preferred learning modes (Schmeck, Ribich & Ramanaiah). This inventory gives an index of students' tendency to be "deep" vs. "shallow" thinkers, reflecting the distinction between understanding and reproducing. The inventory also provides information on the degree of "elaborative processing"--students' tendency to apply new information to their own lives or to generate examples from their own experiences as opposed to simply reiterating information. Schmeck's research suggests that "deep/elaborative" learners more often deal with the meanings of experience, translating information into their own conceptions, whereas "shallow/reiterative" learners simply repeat information in its original form.

Here our results appear rather mixed. We did find, however, that students high on Schmeck's "deep/elaborating" measure wrote significantly more informal entries which involved more internally constructed knowledge and self-disclosure than students low on that measure. It seems likely, then, that more refined examinations of students' learning styles could reveal productive and unproductive ways for students to use academic journals depending on works best for them.

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